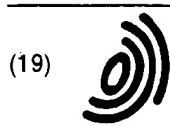


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(54) **TAPE DISPENSER**

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(56) References cited:
CH-A- 312 237 **DE-A- 3 025 345**
GB-A- 1 447 904 **US-A- 2 683 547**

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Description

BACKGROUND AND SUMMARY OF THE INVENTION

[0001] There are many designs of tape dispensers which seek easy dispensing of tape utilizing one hand, such as shown in U.S. patents 2,722,331 and 4,400,231. While these dispensers can be successfully used one handed, most prior art dispensers have one or more features, or lack one or more features, which contribute to less than optimum manipulation of the dispenser, one handed, to dispense pressure sensitive adhesive tape.

[0002] British Patent 1,447,904 shows a casing for supporting tape which may in turn be mounted on a bracket. The tape can extend through an opening in a flat side of the casing to be dispensed. U.S. Patent 2,683,547 shows a tape dispenser having a casing with an extending arm that has a tape pressing roller mounted in the arm.

[0003] According to the present invention a tape dispenser is provided facilitating one hand dispensing of pressure sensitive adhesive tape directly onto a substrate and cutting of the tape immediately after dispensing about .35-.7 cm [1/8-1/4 inch] off of the substrate, which overcomes many of the disadvantages of prior art dispensers. The dispenser according to the present invention by cutting the tape so close to the substrate on which it is dispensed is highly functional in many environments, and it includes nubs which straddle the cutting blade so as to prevent scarring of the substrate during dispensing. The dispenser preferably includes a two piece housing which allows the tape to be inserted and initially started in the dispenser without having to thread the tape through an opening. Also between dispensing motions, the tape is securely yet easily releasably held by a small area projection, rather than a large surface, which facilitates minimal force in detaching the piece of tape to start another dispensing action. Also the housing is particularly constructed with an aesthetic and highly functional toroid shape with a solid exterior, allowing the dispenser to be readily grasped and manipulated by the user. Centrally located tapered wall depressions of the toroid shaped housing are particularly advantageous in facilitating grip by a user which makes it easy to lay and press down the tape on the substrate, and to cut it after dispensing with a simple twisting action. The construction according to the invention is simple yet effective, and can be produced with minimum cost yet utilized with maximum effectiveness.

[0004] According to one aspect of the present invention a tape dispenser is provided comprising the following elements: A plastic housing comprising a hollow interior substantially toroid shaped substantially solid exterior first portion for containing a roll of pressure sensitive adhesive tape, and a second portion comprising a hollow interior arm extending outwardly from the first

portion and in communication with the hollow interior of the first portion. [The arm has a distal part, a first substantially planar surface extending generally radially outwardly from the housing first portion, and a second surface opposite the first surface and having a curved tape pressing portion, the first and second surfaces meeting at the distal part.] A metal serrated blade mounted to the distal part adjacent the curved tape pressing portion is preferred (although a molded plastic blade may be provided). An opening in the second surface between the curved tape pressing portion and the housing first portion allowing tape to pass therethrough from the housing first portion. And, a hub substantially centrally located in the hollow interior of the housing first portion for mounting a roll of pressure sensitive adhesive tape thereon.

[0005] The second opening has a proximate edge closest to the housing first portion and a distal edge adjacent the curved tape pressing portion of the second surface. The dispenser also further comprises a tape adhesive-engaging projection extending from the second surface inwardly into the hollow interior of the arm at the opening proximate edge; the projection including a distal surface which extends into the hollow interior of the arm a sufficient distance to allow the adhesive face of tape being dispensed to adhere securely thereto after cutting and due to natural tape curl, yet does not interfere with dispensing of tape through the opening. The distal surface has an area that is less than 10% of the area of the second surface so as to allow tape to be removed therefrom with a minimal amount of force.

[0006] The arm typically has side walls extending generally perpendicular to, and connecting, the first and second arm surfaces. The arm side walls each have a nub formed at a distal portion thereof, most remote from the housing first portion, the nubs extending outwardly from the first and second surfaces a distance greater than how far the blade extends outwardly therefrom, and straddling the blade, so as to prevent the blade from scarring the substrate onto which tape is dispensed when the dispenser is twisted to effect cutting.

[0007] The housing is preferably two piece, comprising first and second pieces. Each piece comprises part of the first and second housing portions. The hub may comprise a ribbed shaft extending between and engaging the first and second pieces, although the hub may instead be provided by short surfaces upstanding from and interior of each of the first and second pieces, or two telescoping ribbed cylinders one integral with each housing half. A substantially continuous seam is provided between the first and second pieces which may be held together by ultrasonic welding, a pin adjacent the distal part, or in other manners.

[0008] The toroidal shaped first portion comprises a center axis, and also includes concentric tapered wall depressions formed at the center axis. The depressions provide comfortable finger location areas and improved grip. The depressions also may provide centering action

to a roll of tape on the hub/shaft. A roll of pressure sensitive tape is typically mounted within the housing first portion on the hub/shaft and has a leading end portion thereof engaging the projection distal surface.

[0009] According to another aspect of the present invention a tape dispenser is provided comprising the following elements. A plastic housing comprising a hollow interior first portion for containing a roll of pressure sensitive adhesive tape, and a second portion comprising a hollow interior arm extending outwardly from the first portion and in communication with the hollow interior of the first portion. [The arm has a distal part, a first substantially planar surface extending outwardly from the housing first portion, and a second surface opposite the first surface and having a curved tape pressing portion, the first and second surfaces meeting at the distal part.] A metal serrated blade mounted to the distal part adjacent the curved tape pressing portion. An opening in the second surface between the curved tape pressing portion and the housing first portion allowing tape to pass therethrough from the housing first portion, the opening having a proximate edge closest to the housing first portion, and a distal edge adjacent the curved tape pressing portion of the second surface. A hub substantially centrally located in the hollow interior of the housing first portion for mounting a roll of pressure sensitive adhesive tape thereon. And, a tape adhesive-engaging projection extending from the second surface inwardly into the hollow interior of the arm at the opening proximate edge, the projection including a distal surface, which extends into the hollow interior of the arm a sufficient distance to allow the adhesive face of tape being dispensed to adhere securely thereto after cutting and natural tape curl, yet does not interfere with dispensing of tape through the opening, and the distal surface having an area that is less than 10% of the area of the second surface so as to allow tape to be removed therefrom with a minimal amount of force. The second surface tape pressing portion typically has a length from the opening distal edge to the serrated blade of about 1-3.8 cm [0.4-1.5 inches]. The projection distal surface is typically spaced from the second surface less than .5 cm [0.2 inches].

[0010] According to yet another aspect of the present invention a tape dispenser is provided comprising the following elements: A plastic housing comprising a hollow interior substantially toroid shaped substantially solid exterior first portion for containing a roll of pressure sensitive adhesive tape and having a center axis, and a second portion comprising a hollow interior arm extending outwardly from the first portion and in communication with the hollow interior of the first portion. A serrated blade mounted to the arm. An opening in the arm allowing tape to pass therethrough from the housing first portion. A hub substantially centrally located in the hollow interior of the housing first portion for mounting a roll of pressure sensitive adhesive tape thereon. And, two concentric tapered wall, smooth depressions formed at

the center axis on opposite solid exterior portions of the substantially toroid shaped housing first portion, the depressions and substantially solid exterior providing comfortable finger location areas and improved grip.

[0011] It is the primary object of the present invention to provide a simple yet effective tape dispenser, particularly one facilitating one handed dispensing of pressure sensitive tape directly onto a substrate and cutting of the tape immediately after dispensing close to the substrate (e.g. about .35-.7 cm [1/8-1/4] inch off the substrate). This and other objects of the invention will become clear from an inspection of the detailed description of the invention, and from the appended claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012]

FIGURE 1 is a side view of an exemplary tape dispenser according to the present invention;

FIGURE 2 is an exploded perspective view of the dispenser of FIGURE 1 showing the two pieces forming the housing separated;

FIGURE 3 is a detail bottom view of the arm of the dispenser of FIGURES 1 and 2 at the area of the projection, opening, tape pressing curved surface, and blade thereof;

FIGURES 4 through FIGURES 6 are perspective views schematically illustrating use of the dispenser of FIGURES 1 through 3 in the one handed dispensing of pressure sensitive adhesive tape;

FIGURE 7 is a longitudinal cross-sectional view, partly in elevation, of another embodiment of a tape dispenser of the invention showing a particular interengagement of component parts thereof;

FIGURE 8 is a side detail partly cross-sectional, partly elevational view of another embodiment showing the mounting of a blade and holding of housing sections together;

FIGURE 9 is a side schematic view of a tape dispenser like that of FIGURE 1 only having feet which support the arm off a resting surface when the dispenser is not in use; and

FIGURES 10 and 11 are bottom perspective detail views of the dispenser of FIGURE 9 showing two different embodiments of feet.

DETAILED DESCRIPTION OF THE DRAWINGS

[0013] The tape dispenser according to the present invention is shown generally by reference numeral 10

in FIGURES 1, 2, and 4 through 6. The dispenser comprises a plastic housing including a first portion 11, and a second, arm, portion 12. The first portion 11 has a hollow interior, as seen clearly in FIGURE 2, for example, for receipt of a roll of pressure sensitive adhesive tape. The first portion 11 has -- as illustrated in FIGURES 1, 2, and 4 through 6 -- a substantially toroid shape, and substantially solid exterior (i.e. no large openings as in prior art dispensers, into which fingers would necessarily be inserted). The substantially toroid shape is aesthetic and also is advantageous for facilitating gripping of the dispenser during use thereof, as illustrated in FIGURES 4 through 6. The substantially toroid shape and solid exterior, being smooth, continuous and contoured, does not present rough edges, large depressions or holes, or projections which can make grasping of the dispenser 10 uncomfortable. Rather because of its sleek, contoured, smooth nature, it can be used by a worker for long periods of time, for example for sealing boxes with tape, without discomfort.

[0014] Maximum gripping utility is obtained for the substantially toroid shaped housing first portion 11 when depressions -- shown generally by reference numeral 14 in the drawings -- are provided at a center axis 13 of the substantially toroid shaped first portion 11. The depressions 14 have tapering walls, such as shown generally by reference numeral 15, and are smooth, and concentric with each other. They have a generally conical configuration [see FIGURE 7].

[0015] The housing first portion 11 also includes a hub for mounting a roll of tape within the hollow interior of the housing first portion 11. The roll of tape is mounted on the hub, preferably concentric with the depressions 14. While the hub can have a wide variety of configurations, including a pair of generally cylindrical stubs extending inwardly from the depressions 14, the preferred form illustrated in the drawings (see FIGURE 2 in particular) the hub comprises a shaft 16 having a plurality of ribs 17 thereon. The ribs 17 allow the tape to rotate on a core surrounding the shaft 16, but also provide a precise amount of friction to prevent any slack tape inside of the housing part 11. This prevents the tape from getting stuck to the inside of the housing 11.

[0016] The housing second portion, arm 12, also is hollow, and it communicates with the hollow interior of the substantially toroidal shaped portion 11. The arm 12 extends outwardly from the first portion 11, and preferably comprises a first, generally planar surface 19 which extends substantially radially outwardly from the first portion 11, and has a distal part, shown generally by reference numeral 20. A second surface 21 is opposite the first surface 19, and includes a curved surface portion 22 comprising a pressing portion, for pressing tape down on a substrate to which it is applied. The pressing down surface 22 is adjacent the distal part 20. At the distal part 20 is mounted a serrated blade 24. The serrated blade 24 is preferably of metal, but may be of molded plastic and either part of, or attached to, one of the

housing portions 11, 12. The blade 24 is attached to the first surface 19 by any suitable means such as adhesive, interlocking projections, using the natural spring qualities of the blade material trapped between protruding parts of one housing portion (11, 12), or the like.

[0017] An opening through which the tape extends from the housing portion 11 to be dispensed is provided in the surface 21 adjacent the tape pressing portion 22. The opening, shown generally by reference numeral 26 in FIGURE 3, includes a proximate edge 27 which is nearest the housing portion 11, and a distal edge 28 which is closest to the distal part 20 of the arm 12. The surface 22 extends substantially from the distal edge 28 to the blade 24, preferably a distance of about 1-3.8 cm [0.4-1.5 inches]. The curvature of the surface 22 is such that normally as the main strip of tape is being dispensed (see FIGURE 4) the first surface 19 makes an angle of about 30° with respect to the substrate on which the tape is being dispensed.

[0018] According to the invention it is desirable to be able to hold the leading edge of the tape, after cutting, in place so that it extends outwardly through the opening 26. However it is desirable to be able to hold the tape free edge in place with only a minimal amount of force, so that it is easy to detach the tape and continue dispensing. That is it is not desirable to provide a large surface on which the tape sticks, but rather only a small surface. This desirable goal is accomplished by providing a projection 30 which extends into the hollow interior of the arm 12 -- as seen in FIGURES 1 through 3 -- from the proximate edge 27 of the opening 26. The projection 30 has a distal surface 31 -- see FIGURE 2 -- which is small in size, that is less than 10% of the total area of the surface 21, and it engages the adhesive on a piece of tape held within the housing portion 11, yet does not interfere with dispensing the tape. Typically the projection 30 extends into the hollow interior of the arm 12 a distance of less than about .5 cm [0.2 inches], and the distal surface 31 has an area that is less than 1.6 cm² [.25 square inches].

[0019] The arm 12 also is formed by a pair of side walls 34, 35 extending generally perpendicularly to, and connecting, the surfaces 19, 21. As seen most clearly in FIGURES 1-3, the side walls 34, 35 have projecting nubs 36, 37 at the distal part 20 (most remote from the housing first portion 11). The nubs 36, 37 extend outwardly from the surfaces 19, 21 a distance greater than how far the blade 24 extends outwardly therefrom, and straddle the blade 24. Thus the nubs 36, 37 prevent the blade 24 from scarring the substrate onto which tape is being dispensed when the dispenser 10 is twisted to effect cutting.

[0020] As seen most clearly in FIGURE 2, the housing, including both parts 11, 12 thereof, is two piece, having a first piece 40, and a second piece 41. The pieces 40, 41 have a seam 43 is formed between them. The seam 43 may include one or more zigzag portions 44, which facilitate keying of the pieces 40, 41 together, and

facilitate holding of the pieces together once keyed together. The zigzag construction also imparts extra rigidity to the entire dispenser 10, helping to prevent shear forces during the "twist-cut" action of the dispenser 10 during use (as described with respect to FIGURE 6, below). The stepped (zigzag) wall portions may have straight surfaces as illustrated, or the horizontal surfaces thereof may have a slight angle to them to improve the strength of the joint (seam 43) when compressed if the wall thickness of pieces 40, 41 (typically about 1.2 mm) allows it. Also the construction with zigzag portions 44 allows one piece -- 40 -- to define the entire projection 30, and the other piece -- 41 -- to define the surface 22 and distal portion 20 of arm 12 for mounting the blade 24.

[0021] The shaft 16 is connected to the first piece 40 and when the pieces 40, 41 are assembled abuts (or comes close to) the interior of the depression 14 of the second piece 41. The shaft 16, preferably of the same plastic as the pieces 40, 41, preferably molded (e.g. injection molded) as part of the first piece 40 when piece 40 is formed, but may alternatively be affixed to the piece 41 by an adhesive, ultrasonic welding, or any other suitable technique.

[0022] Means are provided for holding the pieces 40, 41 together. The pieces 40, 41 may be held together essentially permanently, so that after the dispenser 10 dispenses the roll of tape that it is sold with, it is discarded; or any suitable conventional mechanism may be provided for releasably holding the parts together so that the dispenser may be disassembled and a new roll inserted in place of the old roll after it is exhausted.

[0023] One exemplary mechanism for holding the pieces 40, 41 together comprises ultrasonic welding along the seam 43; another is an interference fit between the portions 40, 41 along seam 43; another exemplary means comprises adhesive; perhaps preferred is friction fits of pin and shaft components of the portions 40, 41, as described with respect to FIGURES 2, 7 and 8. Since it is particularly important to hold the pieces 40, 41 securely together adjacent the distal part 20, a pin 45 (see FIGURE 2) may be provided connecting the side walls 34, 35 together and affixed to both (e.g. by friction, adhesive, and/or ultrasonic welding).

[0024] Because of the two piece 40, 41 construction, when a roll of pressure sensitive adhesive tape is inserted into the dispenser 10, the tape free end need not be threaded through the opening 26, but rather it may merely be slid into an open channel defining the majority of the opening 26, before the pieces 40, 41 are keyed and affixed together.

[0025] FIGURE 4 illustrates an exemplary use of the dispenser 10 in dispensing pressure sensitive adhesive tape 49. The tape 49 has one surface 50 which typically does not have adhesive (although the dispenser 10 may be utilized for dispensing double faced adhesive tape), and another face having adhesive 51 thereon, as schematically illustrated in FIGURE 4. Dispensing action is

initiated merely by placing the free portion of the tape 49 which extends through the opening 26, which engages the distal surface 31 of the projection 30, into contact with a substrate 52 (see FIGURE 4). The length of the tape outside of the opening 26 is equal to the distance between the opening 26 and the blade 24, e.g. about 1-3.8 cm [0.4-1.5 inches]. Then, with the surface 19 making an angle of about 30° with respect to the substrate 52, an operator grasps the substantially toroidal shaped housing portion 11 as illustrated in FIGURE 4, and moves the dispenser 10 in the direction of arrow 53, while pressing down as indicated by arrow 54. The pressing down action causes the curved surface 22, particularly concentrated at the distal edge 28 at the opening 26, to press down the tape 49 causing the adhesive 51 to adhere securely to the substrate 52.

[0026] Movement in the direction of arrow 53 continues until the desired amount of tape 49 has been dispensed (e.g. the end of a box which is being taped shut is reached). At that time -- as illustrated in FIGURE 5 -- the operator then rotates the substantially toroidal housing portion 11 about a pivot point essentially defined by the nubs 36, 37, and as illustrated by arrow 56 in FIGURE 5. The depressions 14 and substantially solid exterior are particularly useful at this juncture since they facilitate ready grasping of the housing portion 11 by the operator's hands/fingers. The depressions 14 also facilitate the next action which -- as shown in FIGURE 6 -- is a twisting action, as indicated by arrow 57. The twisting action causes the tape 49, which is engaging the blade 24 at that point, between the nubs 36, 37, to be cut by the blade 24, with the free portion 58 (see FIGURE 6) of the tape extending outwardly from the arm 12 adhere to the projection 30. The nubs 36, 37 prevent scarring of the substrate 52 during the twisting in the direction of arrow 57. The tape 49 is cut about 1/8-1/4 inch off the substrate 52, making it certain that tape 49 will stay where placed even at the end of the dispensing stroke, and providing only a small end portion 59 -- see FIGURE 6 -- which need be pressed down onto the substrate 52 by the user's fingers. Then the dispenser 10 is ready to repeat the next one handed dispensing, as illustrated in FIGURE 4.

[0027] FIGURE 7 shows another modification of the tape dispenser, 10', according to the present invention, having a particular construction of the hub and a particular mechanism for holding the housing sections 40, 41 together. In this embodiment components that are the same as those of the FIGURES 1 through 3 embodiment are shown by the same reference numeral.

[0028] In the embodiment of FIGURE 7 the hub is formed by two concentric, telescoping, interlocking tubular elements 61, 62. The element 61 is integral with the housing section 41 (e.g. having been injection molded therewith) while the section 62 is integrally molded with the housing section 40. The exterior diameter of the tubular section 61 is approximately the same as the interior diameter of the section 62 so that there is a tight,

friction, interference fit between them. Alternatively, ribs may be provided extending radially from the exterior surface of the tubular section 61 and axially extending therealong to engage the interior surface of the cylinder 62 to provide a friction fit. Also ribs 63 preferably are provided at spaced locations around the exterior circumference of the tubular section 62 for engaging the interior core of a roll of tape.

[0029] The FIGURE 7 embodiment also comprises a female pin/tube 65 which is integral with the housing section 41, and a male pin 66 which is integral with the section 40, and which mate together adjacent the distal part 20 of the tape dispenser 10' of FIGURE 7. The pins 65, 66 also have a friction/interference fit between them. The combination of the interference fit between the pins 65, 66 and the tubes 61, 62, alone will securely hold the housing sections 40, 41 together along the seam 43. These friction fits will also allow separation of the components 40, 41 (although with significant difficulty) to allow replacement of a used roll of tape.

[0030] FIGURE 8 is a modification of the tape dispenser, showing only the arm portion 12 of the housing section 41 thereof, having the interference fit between the pins 65, 66, and also showing a different construction for mounting the blade 24. In the FIGURE 8 embodiment the blade 24 is of metal (e. g. spring steel), but includes the elongated extension 68. The extension 68, as well as the upturned portion 69 thereof, engages protrusions or projections 70, 71 so as to properly locate the blade 24 in place at the distal part 20 of the dispenser. The projection 70 is integral with the housing section 41, opposite the surface 22, while the projection 71 is integral with the female pin/sleeve 65. The projections 70, 71 being as placed in FIGURE 8, combined with the natural spring action of the metal forming the extension 68 of the blade 24, positively position the blade 24 in place between the nubs 36, 37.

[0031] FIGURE 9 illustrates a dispenser 10" which only slightly departs from the dispenser 10. Dispenser 10" has "feet" which allow the dispenser 10" to stand with the tape being dispensed off any surface, so that the tape will not inadvertently stick to a surface on which the unit is placed. The feet are shown generally by reference numeral 75 in FIGURE 9, shown keeping the entire arm section 12, particularly adjacent the distal part 20 thereof, off a surface on which the housing first portion 11 rests.

[0032] The feet 75 may have a wide variety of configurations. One embodiment, illustrated in FIGURE 10, of feet 75 comprises a first portion 76 integrally molded (i. e. of the same substantially rigid plastic as the housing sections 11, 12) as part of both housing portions 40, 41 to provide two support surfaces, traversing the seam 43. "Feet" 75 also includes a third integrally molded portion 77 also molded with both the housing portions 40, 41 and providing a third support surface, so that a more or less "tripod" support is provided, which will ensure that the arm 12 is supported off the surface with the feet por-

tions 76, 77 engage but without causing any significant discomfort to a user dispensing tape with the dispenser 10", and without otherwise adversely affecting its functionality.

[0033] An alternative embodiment for the feet is shown generally at 75' in FIGURE 11. In this embodiment a soft rubberized (or soft plastic, e. g. an elastomer) body 78 is either adhesively secured to the housing portion 11 or held in some other manner, e. g. by a groove (not shown) in one of the housing sections 40, 41 cooperating with a projection (not shown) on the body 78. The upstanding portions 79, 80 of the body 78 engage the surface to support the arm 12 off the surface.

[0034] The feet 75, 75' will typically be placed at approximately the lengthwise center of gravity of the dispenser 10", typically just in front of (toward the arm 12) the vertical center line of the tape hub up to about 3/8 inch toward the arm 12. This positioning is seen clearly in FIGURE 9.

[0035] It will thus be seen that according to the present invention a highly advantageous dispenser facilitating one handed dispensing of pressure sensitive adhesive tape is provided. While the invention has been herein shown and described in what is presently conceived to be the most practical and preferred embodiment thereof it will be apparent to those of ordinary skill in the art that many modifications may be made thereof within the scope of the invention which scope is to be accorded the broadest interpretation of the appended claims so as to encompass all equivalent structures and devices.

Claims

1. A tape dispenser (10) facilitating one hand dispensing of pressure sensitive adhesive tape (50) directly onto a substrate (52) and cutting of the tape immediately after dispensing close to the substrate, said dispenser comprising a plastic housing (11) an arm (12) extending from the housing (11) and a blade (24) on the arm for cutting off the tape; characterized by and in that

said housing comprises a hollow interior substantially toroid shaped substantially solid exterior first portion (11) for containing a roll of pressure sensitive adhesive tape, and a second portion comprising a hollow interior arm (12) extending outwardly from said first portion and in communication with said hollow interior of said first portion and having a center axis; said arm having a distal part (20), a first surface (19) extending generally radially outwardly from said housing first portion, and a second surface (21) opposite said first surface and having a tape pressing portion (22), said first and second surfaces meeting at said distal part;

- said blade (24) positioned at said distal part adjacent said tape pressing portion;
 an opening (26) in said second surface between said tape pressing portion and said housing first portion allowing tape to pass therethrough from said housing first portion; and
 concentric smooth tapered wall depressions (14) formed at said center axis, said depressions and substantially solid exterior providing comfortable finger location areas and improved grip.
2. A tape dispenser as recited in claim 1 further characterized by a hub (16) substantially centrally located in said hollow interior of said housing first portion for mounting a roll of pressure sensitive adhesive tape thereon.
 3. A tape dispenser as recited in claims 1 or 2 further characterized in that said opening has a proximate edge (27) closest to said housing first portion, and a distal edge (28) adjacent said tape pressing portion of said second surface; and further characterized by a tape adhesive-engaging projection (36) extending from said second surface inwardly into said hollow interior of said arm at said opening proximate edge; said projection including a distal surface (31) which extends into said hollow interior of said arm a sufficient distance to allow the adhesive face of tape being dispensed to adhere securely thereto after cutting, yet does not interfere with dispensing of tape through said opening; said projection distal surface having an area that is less than about 10% of the area of said second surface so as to allow tape to be removed therefrom with a minimal amount of force, and comprising the only tape-engaging projection in said hollow interior of said arm.
 4. A tape dispenser as recited in any of the preceding claims further characterized in that said arm further comprises side walls (34, 35) extending generally perpendicularly to, and connecting, said first and second arm surfaces.
 5. A tape dispenser as recited in claim 4 further characterized in that said arm side walls each have a nub (36, 37) formed at a distal portion thereof, most remote from said housing first portion, said nubs extending outwardly from said first and second surfaces a distance greater than how far said blade extends outwardly therefrom, and straddling said blade, so as to prevent said blade from scarring the substrate onto which tape is dispensed when said dispenser is twisted to effect cutting.
 6. A tape dispenser as recited in any of the preceding
- claims further characterized by and in that said housing is two piece, comprising first (40) and second (41) pieces, each piece comprising part of said first and second housing portions; and a substantially continuous seam (43) provided between said first and second pieces.
7. A tape dispenser as recited in claim 6 further characterized in that said housing is held together at said seam by a pin (45) distinct from said pieces extending between said housing first and second pieces adjacent said distal part.
 8. A tape dispenser as recited in any of claims 2-7 further characterized by a single foot (75, 75') integrally molded with said plastic housing and extending outwardly from said periphery of said substantially solid exterior first portion to support said housing on the substrate with said arms spaced from the substrate and said opening in said arm facing the substrate.
 9. A tape dispenser as recited in any of claims 2-7 further characterized in that said first portion has a circular circumferential periphery except at said second portion; and wherein a single foot (75, 75') integrally molded with said plastic housing and extending outwardly from said circular circumferential periphery of said substantially solid exterior first portion to support said housing on a substrate with said arm spaced from the substrate and said opening in said arm facing the substrate.
 10. A tape dispenser as recited in any of the preceding claims further characterized in that said tape pressing portion (22) is curved.
 11. A tape dispenser as recited in claim 8 or claim 9 further characterized in that said housing is two piece, comprising first (40) and second (41) pieces, each piece comprising part of said first and second housing portions; and wherein said single foot (75') is integrally molded with only one (40) of said first and second housing pieces.

Patentansprüche

1. Ein Klebestreifenausgeber (10), der das Ausgeben eines Klebestreifens (50) mit einer Hand direkt auf ein Substrat (52) ermöglicht sowie das Abschneiden des Klebestreifens unmittelbar nach dem Ausgeben nahe am Substrat, wobei der Ausgeber ein Plastikgehäuse (11), einen Arm (12), der sich von dem Gehäuse (11) heraus erstreckt, und eine Klinge (24) auf dem Arm zum Abschneiden des Klebestreifens umfaßt, **gekennzeichnet durch und dadurch, daß** das Gehäuse einen im Inneren hohlen,

im wesentlichen ringförmigen, äußerlich im wesentlichen kompakten ersten Teil (11) für das Aufnehmen einer Klebestreifen-Rolle umfaßt sowie einen zweiten Teil, der einen hohlen inneren Arm umfaßt, der sich nach außen aus dem ersten Teil heraus und in Verbindung mit dem hohlen Inneren des ersten Teils erstreckt und eine zentrale Achse aufweist;

wobei der Arm einen beabstandeten Teil (20), eine erste Fläche (19), die sich im allgemeinen radial nach außen von dem ersten Teil des Gehäuses erstreckt, und eine zweite Fläche (21) aufweist, die der ersten Fläche gegenüberliegt und ein Klebestreifenandrückstück (22) hat, wobei die ersten und zweiten Flächen sich an dem beabstandeten Teil treffen; die Klinge (24) am beabstandeten Teil benachbart zum Klebestreifenandrückstück positioniert ist; eine Öffnung (26) in der zweiten Fläche zwischen dem Klebestreifenandrückstück und dem ersten Teil des Gehäuses den Durchgang des Klebestreifens von dem ersten Teil des Gehäuses ermöglicht; und konzentrische gleichförmig zulaufende Wandaussparungen (14) an der zentralen Achse ausgebildet sind, wobei die Aussparungen und das im wesentlichen kompakte Äußere komfortable Fingerplatzierungsbereiche und einen besseren Halt bereitstellen.

2. Ein Klebestreifenausgeber nach Anspruch 1, ferner **gekennzeichnet durch** eine Welle (16), die sich im wesentlichen zentral in dem hohlen Inneren des ersten Teils des Gehäuses befindet, um eine Klebestreifen-Rolle darauf aufzustecken.
3. Ein Klebestreifenausgeber nach Anspruch 1 oder 2, ferner **dadurch gekennzeichnet, daß** die Öffnung einen unmittelbar anschließenden Rand (27) aufweist, der dem ersten Teil des Gehäuses am nächsten liegt, sowie einen beabstandeten Rand (28) benachbart zum Klebestreifenandrückstück der zweiten Fläche; und ferner **gekennzeichnet durch** eine an dem Klebstoff des Streifens haftende Erhebung (36), die sich, an dem unmittelbar an die Öffnung anschließenden Rand, von der zweiten Fläche nach innen in das hohle Innere des Arms erstreckt; wobei die Erhebung eine beabstandete Fläche (31) enthält, die sich in das hohle Innere des Arms eine ausreichende Distanz erstreckt, um zu ermöglichen, daß die Klebeseite des auszugebenden Klebestreifens nach dem Abschneiden sicher daran haftet, und die Erhebung nicht die Ausgabe des Klebestreifens durch die Öffnung stört; wobei die beabstandete Fläche der Erhebung einen Bereich abdeckt, der kleiner als ungefähr 10 % des

Bereichs der zweiten Fläche ist, so daß das Entfernen von Klebestreifen mit einem minimalen Kraftaufwand ermöglicht wird, und die beabstandete Fläche die einzige den Klebestreifen aufnehmende Erhebung im hohlen Inneren des Armes beinhaltet.

4. Ein Klebestreifenausgeber nach einem der vorhergehenden Ansprüche, ferner **dadurch gekennzeichnet, daß** der Arm ferner Seitenwände (34, 35) umfaßt, die im allgemeinen senkrecht zu den ersten und zweiten Flächen des Armes und mit diesen verbunden sind.
5. Ein Klebestreifenausgeber nach Anspruch 4, ferner **dadurch gekennzeichnet, daß** jede Seitenwand des Arms einen Vorsprung (36, 37) aufweist, der an einer beabstandeten Position ausgebildet ist, die am weitesten von dem ersten Teil des Gehäuses entfernt ist, wobei die Vorsprünge sich nach außen von den ersten und zweiten Flächen über eine Distanz erstrecken, die größer ist als die Distanz, die sich die Klinge von dort nach außen erstreckt, und die Vorsprünge sich über die Klinge erstrecken, so daß verhindert wird, daß die Klinge das Substrat zerkratzt, auf das der Klebestreifen ausgegeben wird, wenn der Ausgeber zum Auslösen des Schneidens gedreht wird.
6. Ein Klebestreifenausgeber nach einer der vorhergehenden Ansprüche, ferner **gekennzeichnet durch und dadurch, daß** das Gehäuse zweiteilig ist, erste (40) und zweite (41) Teile umfaßt, wobei jedes Teil einen Abschnitt der ersten und zweiten Gehäuseteile umfaßt; und eine im wesentlichen kontinuierliche Naht (43) zwischen den ersten und zweiten Teilen vorliegt.
7. Ein Klebestreifenausgeber nach Anspruch 6, ferner **dadurch gekennzeichnet, daß** das Gehäuse an der Naht durch einen Stift (45) zusammengehalten wird, der von den Teilen abgetrennt ist, die sich zwischen den ersten und zweiten Gehäuseteilen benachbart zu dem beabstandeten Teil erstrecken, abgetrennt ist.
8. Ein Klebestreifenausgeber nach einem der Ansprüche 2 bis 7, ferner **gekennzeichnet durch** einen einzelnen Fuß (75, 75'), der im ganzen mit dem Plastikgehäuse gegossen ist und sich nach außen aus der Berandung des im wesentlichen kompakten äußeren ersten Teils heraus erstreckt, um das Gehäuse auf das Substrat mit den Armen im Abstand von dem Substrat zu stützen, und wobei die Öffnung in dem Arm dem Substrat zugewandt ist.
9. Ein Klebestreifenausgeber nach einem der Ansprüche 2 bis 7, ferner **dadurch gekennzeichnet, daß**

der erste Teil eine kreisförmige Berandung des Umfangs ohne den Bereich am zweiten Teil aufweist; und wobei ein einzelner Fuß (75, 75') im ganzen mit dem Plastikgehäuse gegossen ist und sich von der kreisförmigen Berandung des Umfangs des im wesentlichen kompakten äußeren ersten Teils heraus erstreckt, um das Gehäuse auf das Substrat mit dem Arm im Abstand von dem Substrat zu stützen, und wobei die Öffnung im Arm sich dem Substrat zuwendet.

10. Ein Klebestreifenausgeber nach einem der vorhergehenden Ansprüche, ferner **dadurch gekennzeichnet, daß** das Klebestreifenandrückstück (22) gekrümmt ist.
11. Ein Klebestreifenausgeber nach Anspruch 8 oder Anspruch 9, ferner **dadurch gekennzeichnet, daß** das Gehäuse zweiteilig ist und erste (40) und zweite (41) Teile umfaßt, wobei jedes Teil ein Stück der ersten und zweiten Gehäuseteile umfaßt; und wobei der einzelne Fuß (75') im ganzen mit nur einem (40) der ersten und zweiten Gehäuseteile gegossen ist.

Revendications

1. Distributeur de ruban (10) qui facilite la distribution à l'aide d'une seule main d'un ruban adhésif (50) sensible à la pression directement sur un substrat (52) et la coupe du ruban immédiatement après avoir distribué le ruban à proximité du substrat, ledit distributeur comprenant un réceptacle en plastique (11), un bras (12) s'étendant en partant du réceptacle (11) et une lame (24) disposée sur le bras pour couper le ruban; caractérisé en ce que

ledit réceptacle comprend une première partie (11) comportant un intérieur creux de forme sensiblement toroïdale et un extérieur sensiblement plein qui est destinée à contenir un rouleau de ruban adhésif sensible à la pression, et une deuxième partie comprenant un bras d'intérieur creux (12) s'étendant vers l'extérieur en partant de ladite première partie et qui communique avec ledit intérieur creux de ladite première partie et comportant un axe central; ledit bras ayant une partie distale (20), une première surface (19) s'étendant généralement radialement vers l'extérieur en partant de ladite première partie de réceptacle, et une deuxième surface (21) qui fait face à ladite première surface et qui a une partie de mise en appui du ruban (22), lesdites première et deuxième surfaces se réunissant sur ladite partie distale; ladite lame (24) positionnée sur ladite partie distale en étant adjacente de ladite partie de

mise en appui du ruban; une ouverture (26) pratiquée dans ladite deuxième surface entre ladite partie de mise en appui du ruban et ladite première partie de réceptacle pour pouvoir faire passer le ruban à travers elle en partant de ladite première partie de réceptacle; et des dépressions régulières de paroi concentriques et coniques (14) formées sur ledit axe central, lesdites dépressions et l'extérieur sensiblement plein constituant des zones d'emplacement confortables pour les doigts et permettant de faciliter la saisie.

2. Distributeur de ruban selon la revendication 1 caractérisé en outre par un moyeu (16) placé de manière sensiblement centrale dans ledit intérieur creux de ladite première partie de réceptacle sur lequel est destiné à être monté un rouleau de ruban adhésif sensible à la pression.
3. Distributeur selon les revendications 1 ou 2 caractérisé en outre en ce que ladite ouverture a un bord proximal (27) qui est le plus proche de ladite première partie de réceptacle, et un bord distal (28) adjacent à ladite partie de mise en appui du ruban de ladite deuxième surface; et caractérisé en outre par une saillie (36) engageant le ruban de manière adhésive qui s'étend en partant de la deuxième surface orientée vers l'intérieur et pénètre dans ledit intérieur creux du dit bras sur ledit bord proximal de l'ouverture; ladite saillie comprenant une surface distale (31) qui pénètre dans ledit intérieur creux du dit bras sur une distance suffisante pour permettre à la face adhésive du ruban qui est distribué d'y adhérer solidement après avoir été coupé, sans perturber la distribution du ruban à travers ladite ouverture; ladite surface distale de la saillie ayant une surface qui est inférieure à environ 10% de la surface de ladite deuxième surface de façon à pouvoir en enlever le ruban avec une force minimum, et comprenant la saillie n'engageant que le ruban dans ledit intérieur creux dudit bras.
4. Distributeur de ruban selon l'une quelconque des revendications précédentes caractérisé en outre en ce que ledit bras comprend en outre des parois latérales (34, 35) s'étendant généralement perpendiculairement et reliant lesdites première et deuxième surfaces du bras.
5. Distributeur selon la revendication 4 caractérisé en outre en ce que lesdites parois latérales ont chacune un téton (36, 37) formé sur la partie fiscale de celle-ci, qui est la plus éloignée de ladite première partie de réceptacle, lesdits tétons s'étendant extérieurement en partant desdites première et deuxième surfaces sur une distance supérieure à la dis-

tance sur laquelle ladite lame s'étend vers l'extérieur, et qui outrepassent ladite lame de façon à empêcher que ladite lame ne raye le substrat sur lequel le ruban est distribué lorsqu'on effectue une torsion du distributeur pour effectuer la coupe.

5

deuxième parties de réceptacle.

6. Distributeur de ruban selon l'une quelconque des revendications précédentes caractérisé par et en ce que ledit réceptacle comporte deux pièces, comprenant une première pièce (40) et une deuxième pièce (41), chaque pièce formant une partie des dites première et deuxième parties de réceptacle ; et une jointure sensiblement continue (43) disposée entre lesdites première et deuxième pièces. 10
7. Distributeur selon la revendication 6 caractérisé en outre en ce que ledit réceptacle est maintenu solidaire de ladite jointure par une goupille (45) distincte des dites pièces et qui s'étend entre lesdites première et deuxième pièces adjacentes à ladite partie distale. 15 20
8. Distributeur selon l'une quelconque des revendications 2 à 7 caractérisé en outre par un pied unique (75, 75') venu de matière par moulage avec ledit réceptacle en plastique et qui s'étend extérieurement en partant dudit pourtour de ladite première partie dont l'extérieur est sensiblement plein pour supporter ledit réceptacle sur le substrat, ledit bras étant espacé dudit substrat et de ladite ouverture pratiquée dans ledit bras et faisant face au substrat. 25 30
9. Distributeur de ruban selon l'une quelconque des revendications 2 à 7 caractérisé en outre en ce que ladite première partie a un pourtour circonférentiel sauf sur ladite deuxième partie ; et en ce qu'un pied unique (75, 75') venu de matière par moulage avec ledit réceptacle en plastique et s'étendant en partant dudit pourtour circonférentiel circulaire de ladite première partie dont l'extérieur est sensiblement plein est destiné à supporter ledit réceptacle sur un substrat avec ledit bras qui est espacé du substrat, ladite ouverture pratiquée dans ledit bras faisant face au substrat. 35 40 45
10. Distributeur selon l'une quelconque des revendications précédentes caractérisé en outre en ce que ladite partie de mise en appui du ruban (22) est courbe. 50
11. Distributeur selon la revendication 8 ou la revendication 9 caractérisé en outre en ce que ledit réceptacle comporte deux pièces, comprenant une première pièce (40) et une deuxième pièce (41), chaque pièce comprenant une partie des dites première et deuxième parties de réceptacle ; et en ce que ledit pied unique (75') est venu de matière par moulage avec une seule (40) des dites première et 55

Fig. 1

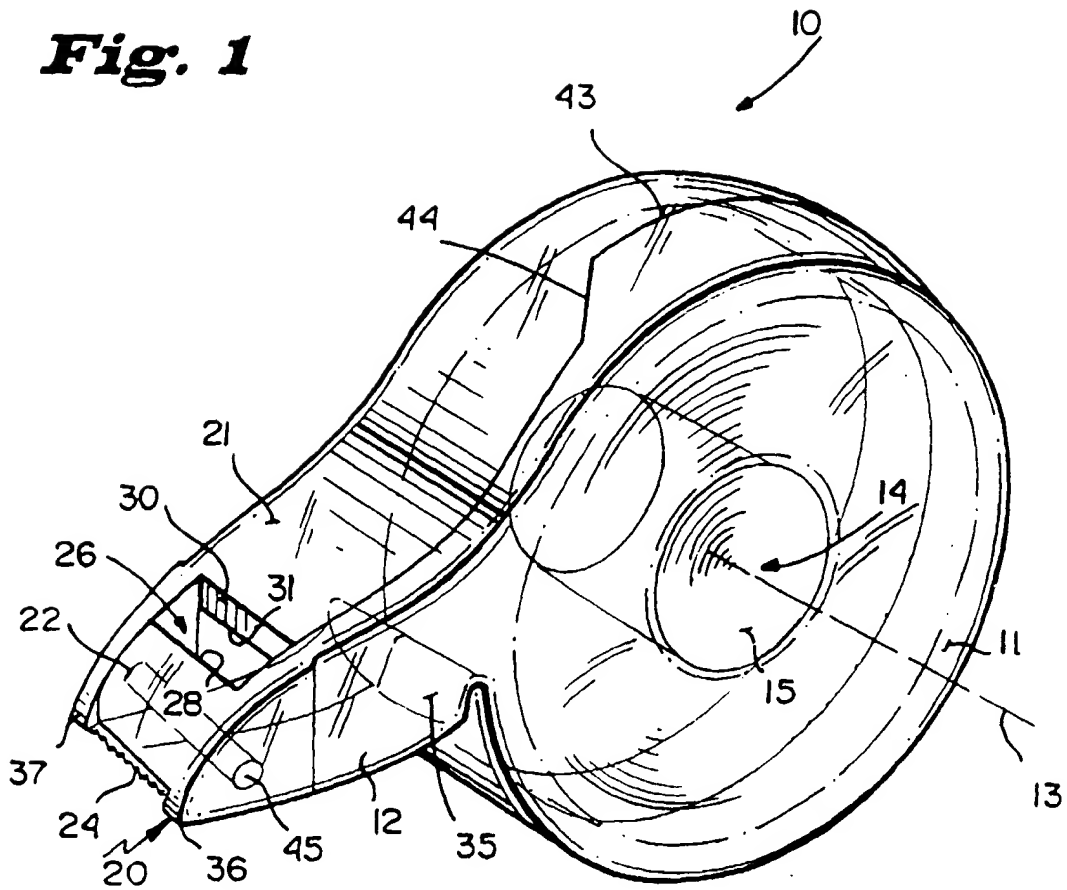


Fig. 2

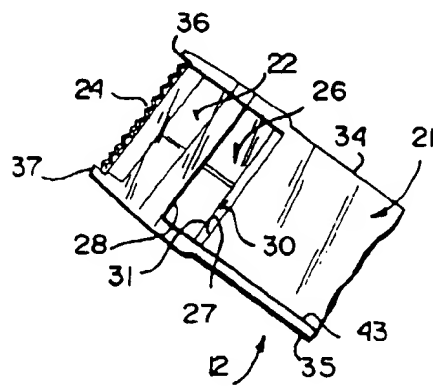
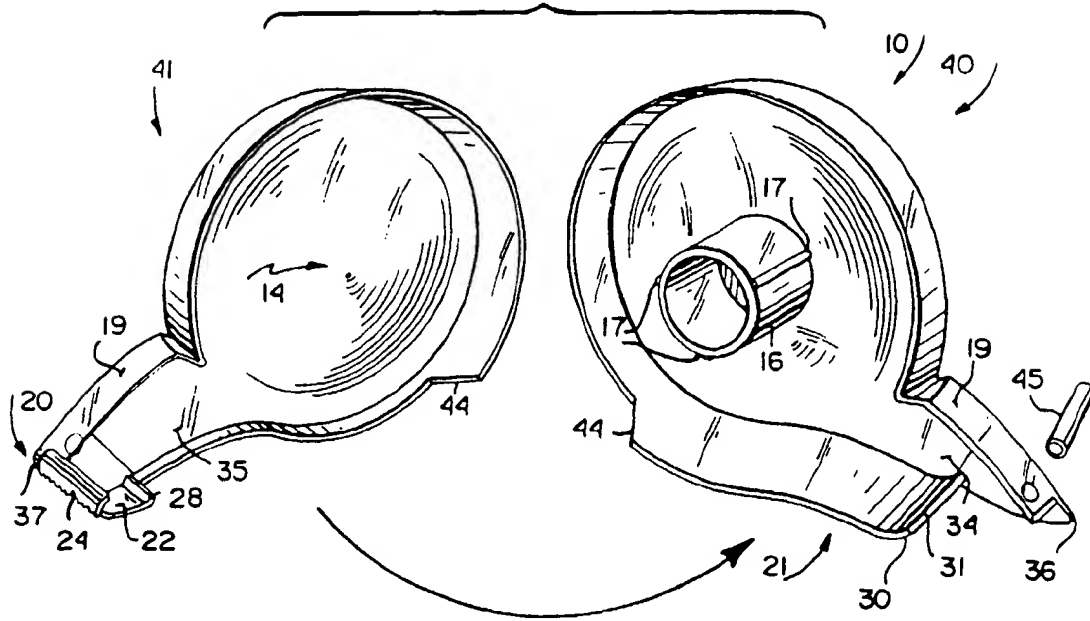
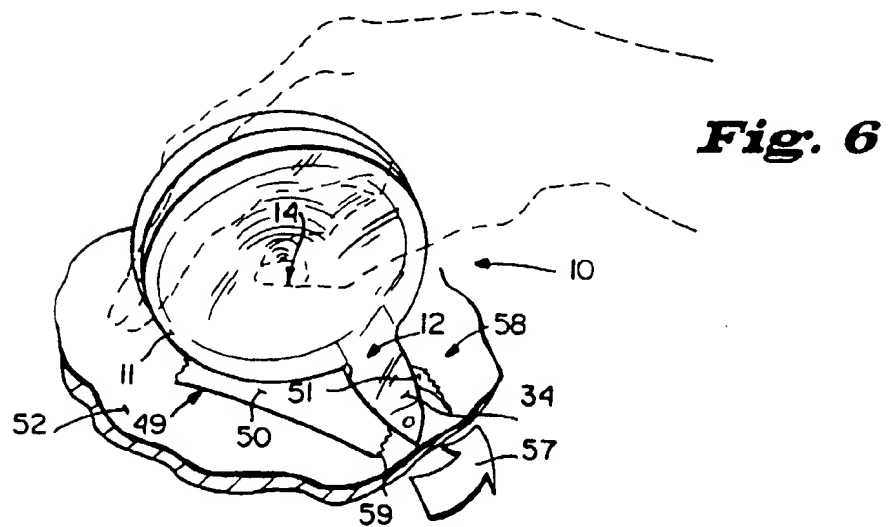
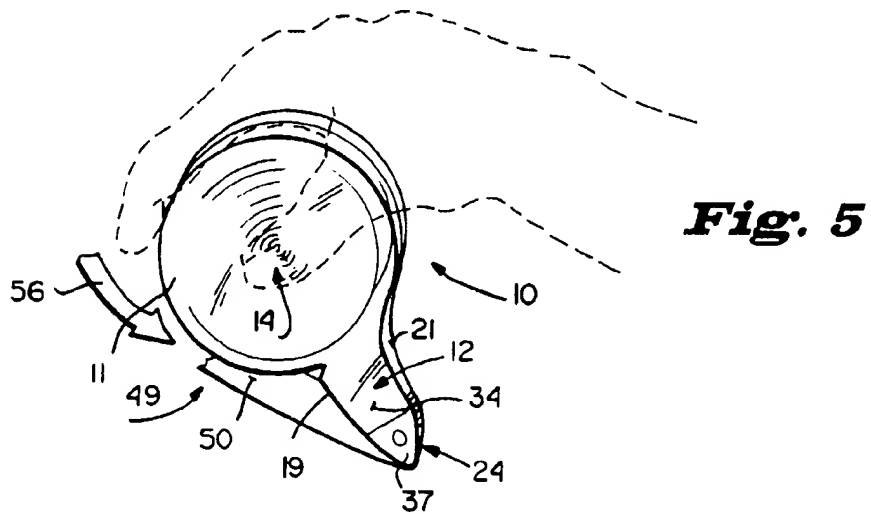
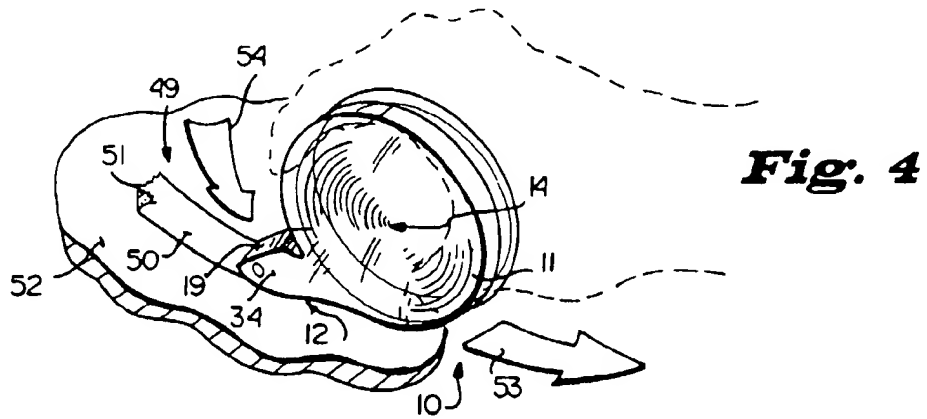


Fig. 3



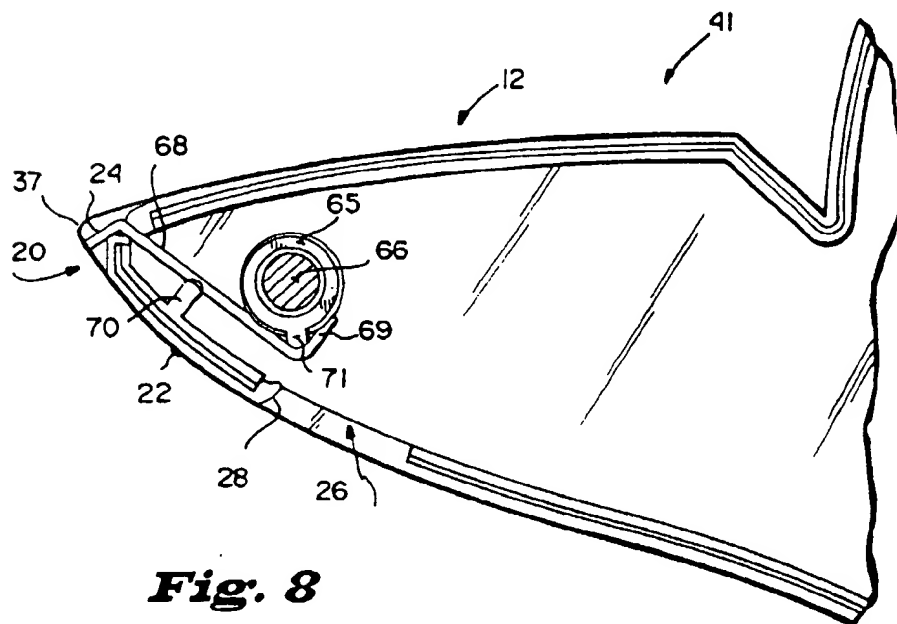
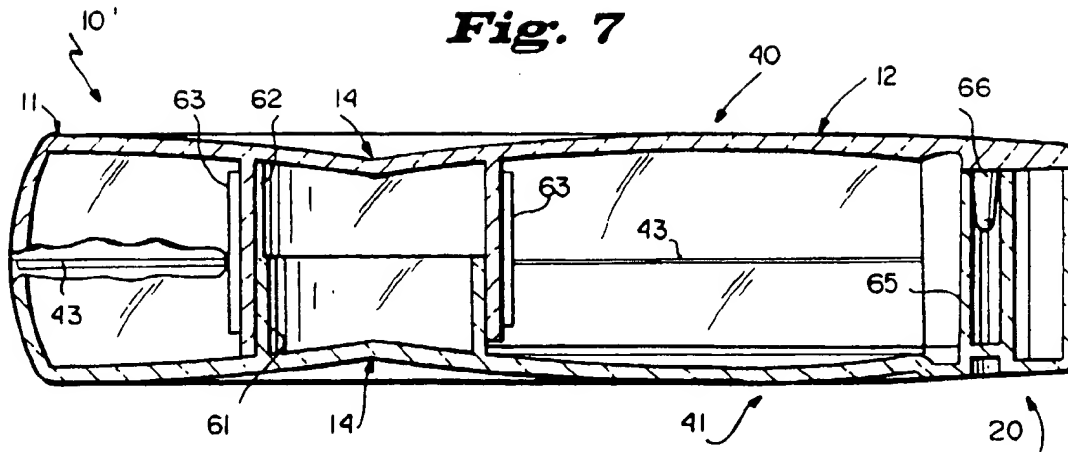


Fig. 9

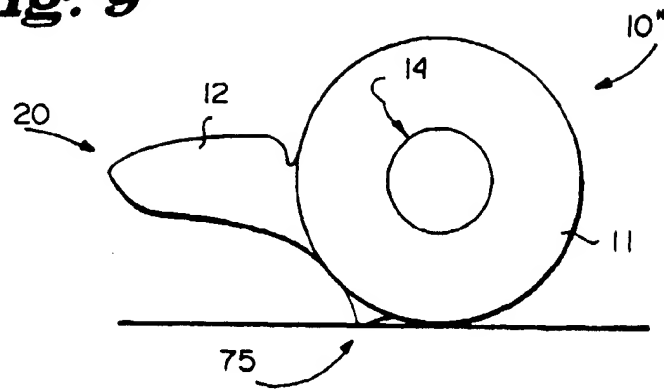


Fig. 10

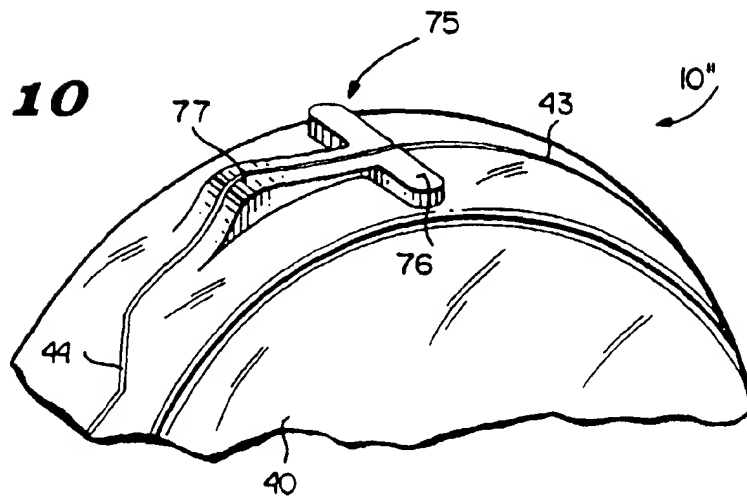


Fig. 11

